

## **MCDOT Technical Summary**

**December 7, 2020**

### **BACKGROUND**

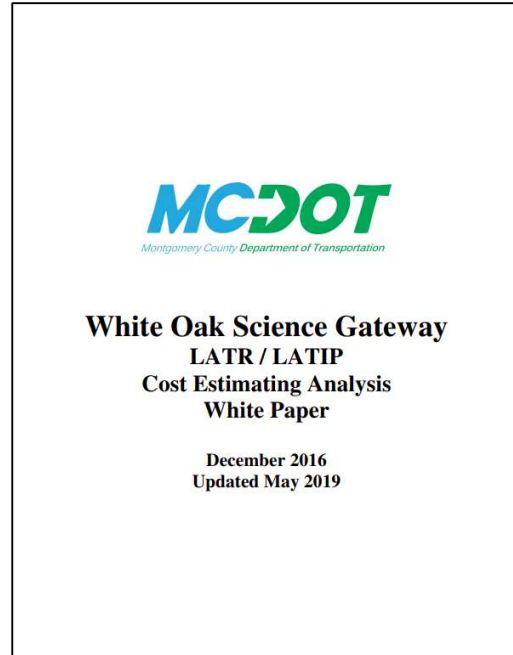
In February 2017 the Council approved the Local Area Transportation Improvement Program, referred to as LATIP. This program evaluated the entire master plan as if it were a single development and identified the necessary infrastructure to serve the planned growth. A cost was assigned to this infrastructure, and a per-trip fee was estimated based on the number of trips the master plan was expected to generate in 2040 at 100% build-out. This fee is lockboxed such that its revenue can only be spent on projects included in the LATIP, all of which are located in the White Oak policy area.<sup>1</sup>

At the intersection of New Hampshire Avenue (MD 650) and Powder Mill Road, the LATIP-identified treatments varied significantly from the findings of the analysis previously performed as part of the White Oak Science Gateway Master Plan. There was inadequate time before the Council action to resolve this discrepancy, and the Council – acknowledging some amount of effort would be necessary – assigned a placeholder \$5 million to the intersection.

This placeholder was assigned with the expectation that the intersection would have to be further evaluated. The approval of LATIP left open the potential for private interests to propose changes to the program. In such cases, applicants would perform the analysis, seek technical concurrence, and this proposal would then be publicly vetted. A public hearing held in November 2018 was the result of such an analysis, focused on identifying the ultimate needs of the intersection.

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<sup>1</sup> Additional information regarding LATIP is available in its accompanying White Paper available at: <https://www.montgomerycountymd.gov/dot-dir/Resources/Files/LATR-WhitePaper.pdf>



The February 2019 Hearing Examiner's Report<sup>2</sup> that resulted from the Public Hearing approved widening of the east and west legs of Powder Mill Road at New Hampshire Avenue, among other treatments, but with the recognition that the intersection would still fail by the year 2040.

In considering how the intersection might achieve adequacy, the Report deferred on the subject of a proposed slip-ramp connecting Elton Road to the Outer Loop of the Capital Beltway (I-495). The Hearing Examiner's Report directed that further consideration of the slip-ramp must consider (1) additional alternatives, and must (2) identify further measures toward addressing cut-through traffic through the Hillandale neighborhood.

The follow-up analysis accompanying this paper evaluates these considerations, and is the subject of this new public hearing.

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<sup>2</sup> Hearing Examiner's Report: <https://montgomerycountymd.gov/dot-dir/Resources/Files/PublicHearingAmendedHearingExaminerReport.pdf>

## FINDINGS

The attached analysis identified four candidate scenarios for the area in addition to the work already approved by the February 2019 Hearing Examiner's Report:

- 1) Signal timing adjustments
- 2) Constructing a northbound right-turn lane from New Hampshire Avenue onto Powder Mill Road
- 3) Signal timing adjustments and constructing the Elton Road Slip-Ramp
- 4) Constructing a northbound right-turn lane from New Hampshire Avenue onto Powder Mill Road, and constructing the Elton Road Slip-Ramp

The operational metrics associated with each scenario are included in Table 6-1 of the analysis, and a summary is provided below:

Goal: less than 80 sec	AM Peak Delay (sec)	PM Peak Delay (sec)
Timing Adjustments	77.5	79.8
NB Right	77.0	62.3
Timing Adj & Slip-Ramp	75.5	79.1
NB Right and Slip-Ramp	75.7	63.2

Combined with already-approved treatments along the Powder Mill approaches to New Hampshire Avenue: signal timing adjustments just barely meet the delay threshold. This could itself meet the goals of the LATIP.

If public input suggests that further effort should be made to reduce delays: additional intersection treatments at New Hampshire Avenue and Powder Mill Road yielded little effect in the AM peak, but substantially improved vehicular delay in the PM peak.

We note that the slip-ramp was found to provide marginal benefit during the AM peak, and little change during the PM peak.

## AGENCY COMMENTS

The analysis was shared with the Maryland State Highway Administration (MDOT SHA) and the Prince George's Department of Public Works and Transportation (PG-DPWT). Significant comments included the following:

- 1) The slip-ramp does not appear to provide significant operational benefits.
- 2) The Outer Loop experiences significant congestion, particularly during the AM peak. A slip-ramp may exacerbate situations whereby delays from this congestion queue back into the MD 650 intersection, potentially blocking other movements.
- 3) Even if technically prohibited, a slip-ramp may induce some motorists along northbound MD 650 to attempt to illegally turn left onto the slip-ramp. This may exacerbate safety and operational issues, particularly impeding the flow of northbound MD 650 traffic.
- 4) The slip-ramp would introduce new and potentially significant cut-through traffic, and potential remedies – while they might address cut-through traffic – may nonetheless introduce new burdens upon local residents.
- 5) Extending the northbound left-turn lane from New Hampshire Avenue onto Powder Mill Road would reduce the length of the left-turn lane from southbound New Hampshire Avenue onto Elton Road. The remaining southbound left-turn capacity appears to be adequate, largely due to that the Powder Mill signal meters flow that might otherwise overflow the shorter left-turn lane.

## RECOMMENDATIONS

Based on the results of the analysis and feedback received at the previous public hearing as well as from other agencies, we recommend that the following actions and associated costs be included into the LATIP:

**Add a northbound right-turn lane from New Hampshire Avenue onto Powder Mill Road.**

**Extend the southbound right-turn lane from New Hampshire Avenue onto the Outer Loop.**

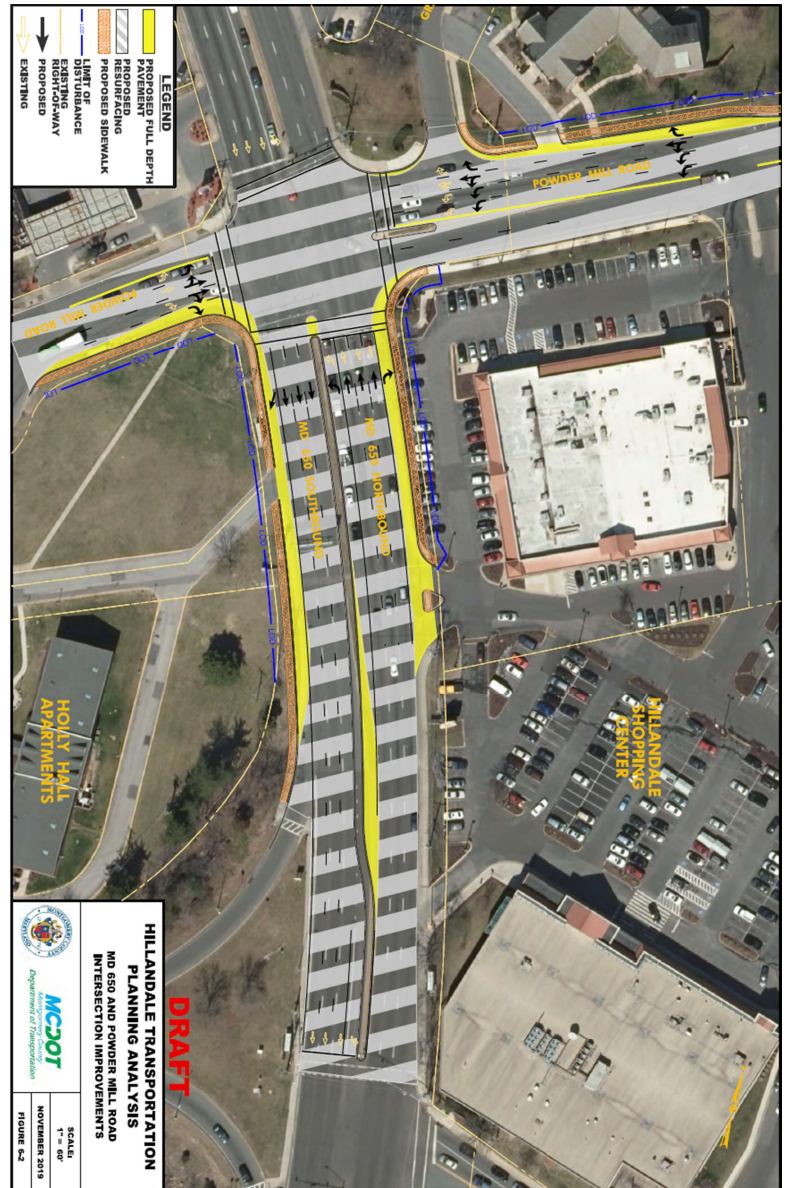
**Extend the northbound left-turn lane from New Hampshire Avenue onto Powder Mill Road.**

The combined costs of these treatments is estimated at \$2,354,000.

This is in addition to the work already approved by the February 2019 Amended Hearing Examiner's Report, which includes modifications to the east- and westbound approaches of Powder Mill Road to New Hampshire Avenue (\$514,900 for both). The total LATIP value of these treatments is \$2,868,900, to be rounded to **\$2,900,000**.

Reconstruction of the existing bus stop along southbound New Hampshire Avenue was approved by the previous public hearing (albeit not eligible for LATIP credit). This analysis does not affect this approval.

The slip-ramp is not recommended for inclusion in the LATIP. Based on this analysis, MCDOT does not see justifiable merit to a slip-ramp linking Elton Road to the Outer Loop.



## IMPACTS

This segment of New Hampshire Avenue is master planned for a minimum **130 ft** right-of-way. The recommended treatments would add an additional lane to each side of the roadway.

The table at the right shows dimensions for various street features based on the draft Complete Streets guidelines,<sup>3</sup> presuming New Hampshire Avenue to be classified as a Town Center Boulevard<sup>4</sup> and reducing street elements to their minimum widths as to fit as nearly within master planned right-of-way as able.

Infrastructure already called for by approved master plans would require a **136 ft** minimum right-of-way. Therefore, the addition of two additional lanes would increase this to a **156 ft** minimum right-of-way (recognizing portions of this may potentially be provided via easements).

Work on these treatments would likely occur either as part of redevelopment, or as part of construction of the master planned Bus Rapid Transit along New Hampshire Avenue.

Right-of-Way Needs	Minimum Width	Master Planned Quantity	Proposed Quantity
Transit Lane	12'	x1	x1
Transit Buffer	2'	x2	x2
L-Turn Lane	10'	x1	x1
Inner Lane	10'	x4	x6
Outer Lane	11'	x2	x2
Street Buffer	6'	x2	x2
2-Way Separated Bikeway	8'	x2	x2
Ped/Bike Buffer	2'	x2	x2
Sidewalk	8'	x2	x2
Frontage Zone	0'	x2	x2
<b>TOTAL ROW</b>		<b>136'</b>	<b>156'</b>

The ongoing work on the Pedestrian Master Plan<sup>5</sup> has developed a "Pedestrian Level of Comfort" metric. Using the methodology included in the current working draft of the Pedestrian Master Plan: at the existing posted speed limit of 40 MPH, under both master planned conditions and the conditions recommended by this analysis, the Pedestrian Level of Comfort along New Hampshire Avenue would be "Somewhat Comfortable", and crossing New Hampshire Avenue the Pedestrian Level of Comfort would be "Somewhat Uncomfortable".

Options exist for potentially improving the Pedestrian Level of Comfort values. Achieving the 30 MPH target speeds suggested by Complete Streets would achieve a Level of Comfort along New Hampshire Avenue of "Very Comfortable" and crossing Level of Comfort of "Comfortable".

<sup>3</sup> May 2020 Draft Complete Streets Guidelines  
<https://www.montgomerycountymd.gov/dot-dte/projects/CSDG/index.html>

<sup>4</sup> Street type classifications will be assigned as part of a separate and future update to the Master Plan of Highways and Transitways

<sup>5</sup> Pedestrian Master Plan  
<https://montgomeryplanning.org/planning/transportation/pedestrian-planning/pedestrian-master-plan/>

### REMAINING ISSUES

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There remain some issues identified by the analysis which fall beyond the scope of the LATIP. These are highlighted as follows, for consideration by future and separate efforts.

### TRUCK U-TURNS

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The proposed treatments do not resolve the issues of trucks from Elton Road performing northbound-to-southbound U-turns at Powder Mill Road. While these volumes are relatively insignificant in the context of traffic analyses and therefore not within what LATIP is scoped to achieve, the brief operational impacts of the multi-point U-turns have nonetheless been a longstanding source of community frustration.

If the Hillandale Shopping Center redevelops, a public or private street might be considered linking Elton Road and Powder Mill Road which could enable trucks to avoid these U-turns. However, this analysis and its associated public process does not itself have the authority to address or condition such a connection.

### CUT-THROUGH TRAFFIC

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The analysis evaluated cut-through treatments within the Hillandale neighborhood. However, as we do not propose to proceed with the slip-ramp, there is no longer a nexus for considering cut-through treatments as part of LATIP.

Residents also previously raised concerns that cut-through treatments may unnecessarily affect the residents themselves, and we note that additional traffic calming treatments along Elton Road approved by the previous public hearing have since been installed.

### MD 212 CONGESTION

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The analysis provides recommendations to MDOT SHA and PG-DPWT for potential treatments along the Riggs Road / Powder Mill Road (MD 212) corridor which may help relieve congestion and cut-through issues. However, there is not a direct nexus between the needs along MD 212 and the LATIP, and therefore these treatments – while they may have merit on their own – are not proposed for inclusion in the LATIP.